



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/587,997

08/01/2006

Andreas Eipper

12810-00334-US1

4348

30678

7590

03/28/2012

CONNOLLY BOVE LODGE & HUTZ LLP

1875 EYE STREET, N.W.

SUITE 1100

WASHINGTON, DC 20006

EXAMINER

LEE, DORIS L

ART UNIT

PAPER NUMBER

1764

MAIL DATE

DELIVERY MODE

03/28/2012

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ANDREAS EIPPER, BERND BRUCHMANN,
DIETRICH SCHERZER, JEAN-FRANCOIS STUMBE,
CARSTEN WEISS, and FREDDY GRUBER

Appeal 2012-000150
Application 10/587,997
Technology Center 1700

Oral Hearing Held: Thursday, March 8, 2012

Before CATHERINE TIMM, BEVERLY A. FRANKLIN (via video),
RAE LYNN P. GUEST, Administrative Patent Judges

ON BEHALF OF THE APPELLANT:

BURTON A. AMERNICK, ESQ.

Connolly, Bove, Lodge & Hutz, LLP

1875 I Street, N.W., Suite 1100

Washington, D.C. 20006

1 *The above-entitled matter came on for hearing on Thursday,*
2 *March 8, 2012, commencing at 3:05 p.m., at the U.S. Patent and Trademark*
3 *Office, 600 Dulany Street, 9th Floor, Alexandria, Virginia, before Jennifer*
4 *M. O'Connor, Notary Public.*

5

6 THE CLERK: Calendar number 41, Appeal No. 2012-000150,
7 Mr. Amernick.

8 JUDGE TIMM: Thank you. Welcome, Mr. Amernick.

9 MR. AMERNICK: Good afternoon, Your Honors.

10 JUDGE TIMM: If you have a business card that you can give
11 our court reporter, that would be appreciated.

12 MR. AMERNICK: Yes, I do.

13 JUDGE TIMM: And as you can see, one of our members is
14 here electronically.

15 MR. AMERNICK: Yes.

16 JUDGE TIMM: There's a camera in the back so she can see
17 you. Also, you can assume that we understand the issues in the case, and
18 proceed from there. You have 20 minutes.

19 MR. AMERNICK: Okay. Since you understand the issues in
20 the case, I'll just jump right to it. We've spoken before in a similar
21 application. The place where we deviate from the prior art relates to
22 particular types of highly branched or hyperbranched polycarbonates. And
23 in this application, the claims are very limited as to the type of
24 hyperbranched polycarbonate. It's limited with respect to range of hydroxyl

1 number, limited with respect to degree of branching to further define the
2 additive that's incorporated in the composition.

3 In addition, the claims recite that there is non-uniformity with
4 respect to the chains in the polymer. The important part of the invention is
5 that we achieve good fluidity, along with maintaining physical properties
6 that are necessary for molding a composition. And one part I'll point to in
7 the specification at page 28, lines 1 to 3 speak about that the compositions
8 can be processed without clumping or caking, thereby resulting in thin-
9 walled moldings, such as nano moldings.

10 With respect to the prior art, again, the primary reference does
11 not disclose the addition of the particular polycarbonate that's employed.
12 That's how we deviate from the prior art. Secondary reference relied upon
13 by the examiner does talk about highly branched -- hyperbranched polymers;
14 included among their list of polymers is mention of a polycarbonate.

15 In order to combine the references, the examiner has relied
16 upon a number of very generalized statements in the secondary reference.
17 To begin with, the reference makes a suggestion of adding polymers to
18 thermoplastic polymers. Does not specifically mention polyesters, as
19 required by the present invention.

20 Furthermore, because there's a list of types of polymers, there's
21 no identification which one one would pick out of the group. In addition to
22 polycarbon -- polycarbonates, we mentioned in the reference polyamides,
23 polyesters, polyureas, polyurethanes, and among those polymers, there is a
24 wide range of characteristics and properties. Looking at the examples, we
25 go from liquids to solids, to sticky solids, and the one example that relates to

1 the polycarbonates is a gum, which does not seem like a suitable physical
2 characteristic for purposes of the invention, which happened to be, again,
3 this combination of fluidity of the composition along with the mechanical
4 properties.

5 This application, as contrasted to the one we previously spoke
6 about, you've decided on, has data to demonstrate the surprising and
7 improved results achieved by the invention. And if we can, we can jump to
8 that data and just briefly speak about it. Table 3 on page 32 of the
9 specification shows that it's a -- there's a comparison in there where you add
10 a relatively small amount of the polycarbonate within the scope of the
11 invention, as contrasted to a composition which is referred to as comparison
12 composition 1C, which does not contain that component. And by looking at
13 the melt volume rate as well as the flow spiral, there's significantly improved
14 characteristics.

15 In addition, the -- certain mechanical properties, such as
16 elasticity and stress, are maintained with respect to that type of comparison.
17 Likewise, similar results can be found in table 3, comparing example 2C to
18 examples 5 and 6. With respect to the data, the examiner seems to have
19 discounted the data, based on the comment made on page 11 of the
20 examiner's answer, where it was mentioned that in table 1, which is on page
21 31 of the specification, that comparative example 2C had a higher melt
22 volume rate than example 6. And that's absolutely true. However, that
23 comparison of comparison example 2C to example 6 is really not a head-to-
24 head comparison, because example 6 includes a significant amount, 30
25 percent, of the -- an auxiliary component, which is glass fibers, whereas

1 example 2C does not include it. So there will be a different effect due to the
2 presence of that component.

3 The better comparison in table 1 would be between example 6
4 and example 1C, where there is no -- where there is the glass fibers that are
5 present. And that comparison will show that, again, significantly improved
6 melt volume rate, flow rate, and again, certain of the physical properties are
7 very comparable.

8 With respect to a comparison of example 2C, the better
9 comparison there -- I guess the better comparison there is, I think, example 1
10 with respect to that.

11 JUDGE GUEST: The examiner also says something about the
12 data not being commensurate with the scope of the claims, and especially
13 with respect to the percentage of the A component, because it only goes --
14 you only have examples here going down to about 67 percent, and your
15 claim goes all the way down to 10 percent. That's particularly relevant if
16 you look at -- if you compare example 1 and example 6, you see a very
17 dramatic reduction in that MVR value when you start adding a lot more of
18 that C component. So if you could speak to that.

19 MR. AMERNICK: Yes. With respect to whether or not
20 commensurate in scope -- getting back to the fact that the references
21 themselves relied upon do not give any indication as to how much of -- and
22 especially speaking about the secondary reference, how much of any of
23 those polymers one would use if it were to be added to another polymeric
24 material.

1 So the comparisons that are in the application do show some
2 very, very low amounts. We have 1 percent of the additive where we
3 deviate from the prior art and we go all the way up to, I think, about 4
4 percent or so. So it's really down at that low range, which is probably the
5 closest thing to the prior art, which has zero. So because the art doesn't
6 really show anything about the ranges, it would seem that being down at the
7 low end is closer to the prior art than if we were to have examples up at the
8 higher end.

9 In addition, I'll mention -- which was mentioned in the reply
10 brief -- is that reference in the reply brief was made to some additional
11 comparative tests that were carried out that were presented in the related
12 prosecution of European application. And those tests show the addition of a
13 small amount of a polycarbonate, but not the type of hyperbranched
14 polycarbonates that are within the scope of the invention, but polycarbonates
15 that are referred to as dendritic polycarbonates. And again, the comparison
16 of the results with respect to flowability, mechanical properties, significantly
17 improved by using those types of polycarbonates.

18 And I'll mention one other comment that was made in the
19 examiner's answer about motivation to combine the references. The
20 motivation -- and this is on page 5, lines 13 to 14 -- was referred to as the
21 fact that both references are related to additives for thermoplastics. Again,
22 my own opinion, I think that's too broad of a scope to find motivation. And
23 in reality, I would say that the two references are not really related or
24 concerned with looking for additives for thermoplastics.

1 The primary reference, Gareiss, is related to an additive that's
2 provided in a thermoplastic polyester in order to achieve flame-proofing.
3 There's nothing discussed there about fluidity. The secondary reference, the
4 British patent to Davies, is related to processes for preparing what they refer
5 to as hyperbranched polymers. And again, although they make some
6 generalized statements about what these polymers can be used for, the focus
7 of that is really not as far as additives are concerned.

8 JUDGE GUEST: The examiner does mention that the
9 secondary reference to just using the -- well, it teaches really using any of
10 these hyperbranched polymers as a plasticizer in a thermoplastic
11 composition, and the Gareiss reference does include plasticizers as possible
12 additives.

13 MR. AMERNICK: And that's correct. But which one would
14 you select? Would you select the ones that are liquids? Would you select
15 the solids? Would you select the sticky solids or the polycarbonate one,
16 which is a gum? I would be pretty surprised if the whole range of very
17 different physical characteristics of polymers within the context of the
18 secondary reference, as well as the wide range of chemical differences
19 between polycarbonates, polyesters, polyamides, polyureas, polyurethanes,
20 would all function as a plasticizer. And it also talks about reactive
21 plasticizers, and whether or not you want to add a reactive plasticizer to
22 the -- you know, to the thermoplastic polyester was certainly another
23 question.

24 Getting to example 5 in the secondary reference to Davies,
25 which is the only one that prepares the polycarbonate, they have these

1 ending groups, which are these imidazolide groups . And those are
2 somewhat unstable. And if you look to -- it doesn't say it in example five,
3 but if you look to example eight in the British patent, it actually mentions
4 those groups as end groups and talks about the fact that there's going to start
5 to be a conversion of those groups due to hydrolysis just with moisture that
6 may be around.

7 So those things are really not that suitable to even start thinking
8 about adding it to compositions.

9 JUDGE GUEST: But it also mentions that those imidazolide
10 groups can be reacted -- subsequently reacted, and they become carbonates.

11 MR. AMERNICK: They could be subsequently reacted; that's
12 certainly correct.

13 JUDGE GUEST: In which case, how would that distinguish
14 from your invention if you had --

15 MR. AMERNICK: Well, first of all, they didn't subsequently
16 react them. Whether or not you start with this gum and decide to react it
17 with something else and how it affects the properties, I don't really know,
18 myself.

19 JUDGE TIMM: Judge Franklin, do you have any question?

20 JUDGE FRANKLIN: No, no questions.

21 JUDGE TIMM: Judge Guest?

22 JUDGE GUEST: No.

23 JUDGE TIMM: Okay, I think we understand your position.

24 MR. AMERNICK: Okay. Well, thank you very much. I
25 appreciate the time, and I appreciate your consideration.

Appeal 2012-000150
Application 10/587,997

1 JUDGE TIMM: Thank you for coming in.

2 MR. AMERNICK: My pleasure.

3

4 (Whereupon, at 3:22 p.m., the proceedings were concluded.)

5 * * * * *



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/587,997

08/01/2006

Andreas Eipper

12810-00334-US1

4348

30678

7590

03/28/2012

CONNOLLY BOVE LODGE & HUTZ LLP

1875 EYE STREET, N.W.

SUITE 1100

WASHINGTON, DC 20006

EXAMINER

LEE, DORIS L

ART UNIT

PAPER NUMBER

1764

MAIL DATE

DELIVERY MODE

03/28/2012

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ANDREAS EIPPER, BERND BRUCHMANN,
DIETRICH SCHERZER, JEAN-FRANCOIS STUMBE,
CARSTEN WEISS, and FREDDY GRUBER

Appeal 2012-000150
Application 10/587,997
Technology Center 1700

Before: CATHERINE Q. TIMM, BEVERLY A. FRANKLIN, and
RAE LYNN P. GUEST, *Administrative Patent Judges*.

GUEST, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from the Examiner's
decision to reject claims 1-14 under 35 U.S.C. § 103(a) as unpatentable over
Gareiss (US 6,084,012, issued July 4, 2000) in view of Davis (GB 2 324

797, published November 4, 1998).¹ We have jurisdiction under 35 U.S.C. § 6(b). An oral hearing was held on March 8, 2012.²

We AFFIRM.

Appellants' invention relates to a molding composition comprising a thermoplastic polyester, a highly branched or hyperbranched polycarbonate, and other additives (Spec. 1:5-16). The molding composition has good flowability characteristics and mechanical properties (Spec. 3:17-26).

Claims 1 and 5 are illustrative:

1. A thermoplastic molding composition comprising:
 - A) from 10 to 99.99% by weight of at least one thermoplastic polyester;
 - B) from 0.01 to 50% by weight of a highly branched or hyperbranched polycarbonate having an OH number of from 1 to 600 mg KOH/g of polycarbonate (to DIN 53240, Part 2), a degree of branching from 10 to 99.9%, and both structural and molecular non-uniformity;
 - C) from 0 to 60% by weight of other additives;

¹ The Examiner also rejects claims 1-14 under the judicially-created doctrine of obviousness-type double patenting over claims 1-20 of co-pending U.S. applications 11/996,489 and 11/815,238. Appellants do not traverse the merits of the double patenting rejections (*see generally* App. Br.). Appellants initially request that these rejections be withdrawn and added to the later filed applications (App. Br. 9). When the Examiner correctly indicates that withdrawal on such a basis is not appropriate (Ans. 13), Appellants request withdrawal on the basis that terminal disclaimers were filed in the co-pending applications (Reply Br. 3). However, as no terminal disclaimers have yet been filed in the record of the present application, we summarily affirm the double patenting rejections as Appellants have waived any appeal of the rejections.

² We refer to the transcript of the oral hearing herein as "Tr."

wherein the total of the percentages by weight of components A) to C) is 100%.

5. The thermoplastic molding composition according to claim 1, wherein component B) is obtainable via a process comprising:

reacting at least one organic carbonate (A) of the general formula $\text{RO}[(\text{CO})]_n\text{OR}$ with at least one aliphatic, aliphatic/aromatic or aromatic alcohol (B) which has at least 3 OH groups, with elimination of alcohols ROH to give one or more condensates (K), where each R, independently of the others, is a straight-chain or branched aliphatic, aromatic/aliphatic or aromatic hydrocarbon radical having from 1 to 20 carbon atoms, and where the radicals R may also be connected to one another to form a ring, and n is an integer between 1 and 5, or

ab) reacting phosgene, diphosgene or triphosgene with abovementioned alcohol (B), with elimination of hydrogen chloride, and

intermolecular reaction of the condensates (K) to give a highly functional, highly branched, or highly functional, hyperbranched polycarbonate,

where the quantitative proportion of the OH groups to the carbonates in the reaction mixture is selected in such a way that the condensates (K) have an average of either one carbonate group and more than one OH group or one OH group and more than one carbonate group.

Appellants' arguments are principally directed to independent claim 1 (App. Br. 6-7). Appellants separately address claim 5 (*id.*, 8). Any claim not separately argued will stand or fall with independent claim 1. *See* 37 C.F.R. § 41.37(c)(1)(vii).

II. DISCUSSION

We adopt the Examiner's findings in the Answer as our own and add any additional findings of fact appearing below for emphasis.

A. CLAIM 1

1. ISSUE ON APPEAL

A first issue on appeal arising from the contentions of Appellants and the Examiner is: does the evidence support the Appellants' view that (a) the Examiner unreasonably concluded that one of ordinary skill in the art would have added the polycarbonate disclosed by Davis as a plasticizer in the thermoplastic polyester composition taught by Gareiss and (b) a prima facie case of obviousness, if established, is sufficiently rebutted by Appellants' evidence of an unexpected and superior increase in flowability? We answer this question in the negative.

2. ANALYSIS

The Examiner finds that Gareiss teaches a thermoplastic polyester molding composition that includes components A) and C) of claim 1, but does not disclose including a highly branched or hyperbranched polycarbonate component B) as recited in claim 1 (Ans. 5). The Examiner finds that Davis teaches hyperbranched polymers, one of which is a hyperbranched polycarbonate having the features recited in claim 1 (*id.*). The Examiner finds that Davis teaches that "[m]any of the hyperbranched polymers of the invention have reactive functional groups at the surface . . . [and] can also be used as reactive plasticizers in thermoplastic composition" (*id.*; see Davis, p. 16, ll. 26-32). The Examiner thus concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to add the hyperbranched polycarbonates of Davis to the thermoplastic polyester composition of Gareiss to receive the expected

benefits of the polycarbonate behaving like a plasticizer (Ans. 5).

Appellants contend that the teaching in Davis is not specific enough to have suggested to one of ordinary skill in the art to specifically add the hyperbranched polycarbonates, among all of the hyperbranched polymers disclosed in Davis, to a polyester composition, specifically, among all types of possible thermoplastic compositions (App. Br. 7; Reply Br. 3; Tr. 3:16-25 and 7:5-23). We do not find Appellants' arguments to be convincing.

Davis teaches that types of hyperbranched polymers suitable for use as a plasticizer are those with reactive functional groups at the surface (Davis, p. 16, ll. 26-32). Appellants have provided no convincing evidence that the hyperbranched polycarbonates taught by Davis do not have reactive functional groups at the surface of the compound structure, and thus would not be expected to function as a plasticizer in the manner suggested by Davis.

Appellants present no convincing evidence that plasticizers are only common additives in PVC or cellulosic materials and are not generally known in the art as additives for thermoplastic polyesters (App. Br. 7). Appellants cite to pages 203-205 and 209-211 of Additives for Plastic Handbook, Elsevier, 1996, as evidence of the use of plasticizers in thermoplastic compositions, but do not provide a copy of the evidence in the record. Accordingly, we accord this evidence little weight. Moreover, we find Appellants' arguments to be contrary to the evidence of record. For example, Gareiss teaches that the thermoplastic polyester molding composition may also include plasticizers (Gareiss, col. 11, l. 66 to col. 12, l. 2). Appellants have not provided any convincing evidence that distinguishes between the "reactive plasticizer" taught by Davis and the plasticizer taught by Gareiss as being a suitable additive (*see* Tr. 7:20-23). Appellants also

have not provided any convincing evidence that the “gum” disclosed in Example 5 of Davis has unsuitable physical properties to be considered a plasticizer for the thermoplastic polyester of Gareiss (*see* App. Br. 9; Tr. 3:25-4:5). Appellants’ attorney arguments do not take the place of evidence in the record. *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974).

Appellants further contend that the Examiner’s conclusion of obviousness is rebutted by evidence of “the dramatic improvement of flowability [measured as an MVR value] even by adding small amounts of highly branched or hyperbranched polycarbonate” (App. Br. 6; *see also* Tr. 4:6-11).³

The Examiner contends that the data presented by Appellants is not commensurate with the scope of the claimed invention (Ans. 11). In particular, the range of component A) recited in the claims is from 10 - 99.9% by weight, but Appellants’ data does not provide a comparable MVR value for any concentrations of A) less than 67% (*id.*; *see* Spec. 31:18-33:35, Tables 1-5).

We agree with the Examiner that the data does not evince that the improvements exist for the entire scope of the claimed invention, particularly a composition having smaller concentrations of component A), e.g., less than 50% by weight. Most of Appellants’ examples that have a very high MVR value (of greater than 250) do not include any additive component C) and, thus, are MVR values for compositions having only a

³ We do not consider Appellants’ additional data presented for the first time in the Reply Brief (Reply Br. 2). Such evidence is not timely presented, and the Examiner had no practical opportunity to address Appellants’ belatedly presented evidence. 37 C.F.R. §41.41 (a)(2) (“A reply brief shall not include any new or non-admitted amendment, or any new or non-admitted affidavit or other evidence.”).

very high concentration (95-100%) of component A). Appellants' data contains no examples in which the concentration of component A) is less than 67%. We note that MVR values drop significantly upon a reduction of component A) even when the same amount of component B) is added. For example, compare Examples 1 and 6 from Table 1, wherein the MVR value drops from greater than 250 to 34.4 as the concentration of component A) drops from 97% to 67%) with the same amount of component B) (Spec. 31). Thus, Appellants have provided no convincing evidence that an unexpected "dramatic improvement" in flowability fairly translates across the entire claimed range of 10-99.9% component A), particularly at concentrations less than 50%. *In re Harris*, 409 F.3d 1339, 1344 (Fed. Cir. 2005) ("Even assuming that the results were unexpected, Harris needed to show results covering the scope of the claimed range. Alternatively Harris needed to narrow the claims."); *In re Greenfield*, 571 F.2d 1185, 1189 (CCPA 1978) ("Establishing that one (or a small number of) species gives unexpected results is inadequate proof, for 'it is the view of this court that objective evidence of non-obviousness must be commensurate in scope with the claims which the evidence is offered to support.'").

Accordingly, the weight of the evidence taken as a whole supports the Examiner's conclusion of obviousness under the law.

B. CLAIM 5

1. ISSUE ON APPEAL

A second issue on appeal arising from the contentions of Appellants and the Examiner is: does the evidence support the Appellants' view that the Examiner erred in finding that Davis teaches the hyperbranched polycarbonate particularly recited in claim 5? We answer this question in the negative.

2. ANALYSIS

Claim 5 is a product-by-process claim. We agree with the Examiner that it is the patentability of the product defined by the claim, rather than the process for making it that we must gauge in light of the prior art. *In re Wertheim*, 541 F.2d 257, 271 (CCPA 1976); *In re Brown*, 459 F.2d 531, 535 (CCPA 1972). As such, the Examiner finds that Davis describes an identical hyperbranched polycarbonate compound, even though it is made by a different process (Ans. 6).

Appellants contend that the claimed hyperbranched polycarbonates are structurally distinct from Davis' polycarbonates because the claimed polycarbonates do not contain imidazolidine end groups, as taught by Davis, which are unstable, easily hydrolyze, and the resulting imidazole has to be removed from the reaction mixture (App. Br. 8).

Appellants' arguments fail to convince us of a structural distinction between Davis' hyperbranched polycarbonates and the hyperbranched polycarbonates made by the process recited in claim 5. For example, Davis teaches polymerizing a compound having a single hydroxyl group (A) and two or more imidazolidine groups (B) to form a hyperbranched polymer having terminal imidazolidine groups (Davis, p. 9, ll. 9-21). Davis further teaches that, in just such an AB₂ structure, the terminal imidazolidine groups can be reacted in a further step to convert them to different groups if desired (Davis, p. 6, ll. 4-11; *see also* Ans. 13). For example, Davis further teaches that the imidazolidine of a diol can be reacted with a triol or the imidazolidine of a triol can be reacted with a diol to produce a hyperbranched polycarbonate (Davis, p. 16, ll. 1-3 and 18-21). Thus, the mere presence of imidazolidine groups upon polymerization does not, without more, distinguish the

hyperbranched polycarbonates that are formed once the imidazolidine groups have been further reacted.

Appellants also contend that, unlike the hyperbranched polycarbonates of the claimed invention, Davis' hyperbranched polycarbonates have poor processability, cause massive fogging, and are prone to forming mold deposits (Ans. 9).

Appellants direct us to no convincing evidence of a difference in properties between the hyperbranched polycarbonate structure prepared as taught by Davis and as recited in claim 5. As mentioned above, Appellants' attorney arguments do not take the place of evidence in the record. *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974).

When asked during oral arguments, Appellants' attorney did not know how the structure and properties of the hyperbranched polycarbonates would be distinguished, when the imidazolidine groups were further reacted to form hyperbranched polycarbonates, as taught by Davis (Tr. 8:9-18).

The weight of the evidence taken as a whole supports the Examiner's conclusion of obviousness under the law.

III. CONCLUSION

On the record before us and for the reasons discussed above, we sustain the rejection maintained by the Examiner.

IV. DECISION

We affirm the Examiner's decision.

V. TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

Appeal 2012-000150
Application 10/587,997

AFFIRMED

cu



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

11/813,833

07/12/2007

Dietrich Scherzer

12810-00509-US

7670

23416

7590

02/16/2012

CONNOLLY BOVE LODGE & HUTZ, LLP

P O BOX 2207

WILMINGTON, DE 19899

EXAMINER

LEE, DORIS L

ART UNIT

PAPER NUMBER

1764

MAIL DATE

DELIVERY MODE

02/16/2012

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DIETRICH SCHERZER, BERND BRUCHMANN,
ANDREAS EIPPER, JEAN-FRANCOIS STUMBE, CARSTEN WEISS,
MICHAELA LIESE, and MARK VOELKEL

Appeal 2011-001420
Application 11/813,833
Technology Center 1700

Before CATHERINE Q. TIMM, BEVERLY A. FRANKLIN, and
RAE LYNN P. GUEST, *Administrative Patent Judges*.

GUEST, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision to reject claims 14-25 under 35 U.S.C. § 103(a) as being unpatentable over Scherzer (US 2006/0142442 A1; published June 29, 2006) in view of Brenner (US 6,528,612 B1; issued March 4, 2003) and Dvornic

(US 2002/0161113 A1; published October 31, 2002).¹ We have jurisdiction under 35 U.S.C. § 6(b). An oral hearing was held January 12, 2012.²

We AFFIRM.

Appellants' invention relates to a molding composition comprising a thermoplastic polymer, a highly branched or hyperbranched polycarbonate or polyester, a naturally occurring oil or fatty acid ester, and other additives (Spec. 1:5-16). The molding composition has good flowability characteristics and mechanical properties and does not exude or form mold deposits (Spec. 2:32-35). Claim 14 is illustrative:

- 14. A thermoplastic molding composition, comprising
 - A) from 10 to 98.9 % by weight of at least one thermoplastic polyester;
 - B) from 0.01 to 50 % by weight of
 - B1) at least one highly branched or hyperbranched polycarbonate; or
 - B2) at least one highly branched or hyperbranched polyester of A_xB_y type, wherein x is at least 1.1 and y is at least 2.1; or

¹ The Examiner also rejects claims 14-25 under the judicially-created doctrine of obviousness-type double patenting over the claims of ten different pending U.S. applications in view of Scherzer. Appellants do not traverse the merits of the double patenting rejections (*see generally* App. Br.). Appellants have demonstrated an intent to submit the necessary papers to overcome the double patenting rejections (*see* Transcript 2:22-25), and, in fact, appear to have submitted a terminal disclaimer on September 21, 2010. The Examiner has not yet withdrawn the rejections in view of the terminal disclaimer. Thus, we summarily affirm the double patenting rejections as Appellants have waived any appeal of the rejections and direct the Examiner to address the submitted terminal disclaimer in due course.

² We refer to the transcript of the oral hearing herein as "Transcript."

- B3) mixtures of B1) and B2);
 - C) from 0.1 to 10 % by weight of
 - C1) at least one epoxidized naturally occurring oil;
 - C2) at least one epoxidized naturally occurring fatty acid ester; or
 - C3) mixtures of C1) and C2); and
 - D) from 0 to 60 % by weight of other additives;
- wherein the total of the percentages by weight of components A), B), C), and D) is equal to 100 %.

Appellants have not argued any particular claim on appeal separately from the others (*see* App. Br. 3-7). Accordingly, all the appealed claims stand or fall together with representative claim 14. *See* 37 C.F.R. § 41.37(c)(1)(vii).

II. DISCUSSION

ISSUE ON APPEAL

The Examiner relies on the teachings of Scherzer and Brenner as evidence that a molding composition as claimed having the claimed highly branched or hyperbranched polycarbonate (B1) would have been obvious (Ans. 4-5). The Examiner relies on the teachings of Scherzer and Dvornic as evidence that a molding composition as claimed having the claimed highly branched or hyperbranched polyester (B2) would have been obvious (Ans. 4-5).

Claim 14 recites that the molding composition comprises B1) polymers as claimed, B2) polymers as claimed, or mixtures thereof but does not require both polymers to be present. Accordingly, the claim would be rendered obvious using either B1) or B2) in a molding composition.

Appellants agree with this interpretation of claim 1 (Transcript 10:11-23). Since the Examiner need not have relied on both Brenner and Dvornic in rejecting claim 14, we focus our analysis only on the combination of Scherzer and Brenner as evidence that a molding composition as claimed having the claimed highly branched or hyperbranched polycarbonate (B1) would have been obvious.

Accordingly, the dispositive issue on appeal arising from the contentions of Appellants and the Examiner is: does the evidence support the Appellants' view that the Examiner erred in concluding that the claimed molding composition having a highly branched or hyperbranched polycarbonate would have been obvious to one of ordinary skill in the art based on the teachings of Scherzer and Brenner? We answer this question in the negative.

ANALYSIS

Appellants contend that one of ordinary skill in the art would not have considered the polycondensates taught by Brenner, despite being identified in Brenner as "highly branched" (Brenner, col. 1, ll.15-16), to be the "highly branched or hyperbranched polycarbonates" recited in the claims (App. Br. 6; Transcript 4:14-15). According to Appellants, the hyperbranched polycondensates taught by Brenner are structurally similar to dendrimers, which Appellants contend are distinguished in Appellants' Specification (App. Br. 6). Appellants elaborated on this position in the oral hearing in stating that Brenner teaches "using dendrimers in order to get their materials. That is a key part of the invention in Brenner" (Transcript 4:24-25). Appellants point out that "the objective [of Brenner] is there as to minimize any differences in various molecular weights of change on those type[s] of

materials, those would be similar to the dendrimers that are present in the prior art” (Transcript 5:1-5). Appellants reference page 1 of the Specification as allegedly discussing the “problems when you do add dendrimers to thermoplastic polyesters,” including poor solubility and high glass transition temperatures (Transcript 5:6-12).

We are not persuaded that Appellants’ Specification has sufficiently defined a “highly branched or hyperbranched polycarbonate” to distinguish over the polycondensates described by Brenner.

During examination, “claims . . . are to be given their broadest reasonable interpretation consistent with the specification, and . . . claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (*quoting In re Bond*, 910 F.2d 831, 833 (Fed. Cir. 1990)).

Appellants’ Specification differentiates between “[d]endritic polymers having a perfectly symmetrical structure, known as dendrimers” and “highly branched or hyperbranched polymers” that “have linear polymer chains and unequal polymer branches” only in terms of the symmetry of their structure and ease of manufacture (Spec. 1:29-2:3; Spec. 8:11-19; *see also* Transcript 6:8-16). Contrary to Appellants’ arguments, Appellants’ Specification shows that dendrimers “provide[] advantageous polymer properties” including “surprisingly low viscosity” and “high reactivity, due to the large number of functional groups on the surface of the sphere” (Spec. 1:35-37). The only problems Appellants identify with respect to using dendrimers is a complicated preparation process which limits production to a laboratory

scale, while highly branched and hyperbranched polymers can be prepared using industrial processes (Spec. 1:37-2:1).

Appellants' Specification describes that "hyperbranched polymers" can be prepared in two ways, namely as the AB_2 type, i.e., using a trifunctional monomer having one reactive group A for each two reactive groups B, and as A_x+B_y type, i.e., the reaction of a difunctional monomer with a trifunctional monomer (Spec. 2:4-13). Appellants' Specification describes problems known to occur with "dendrimeric AB_2 type polyester," in which a polyhydric alcohol reacts with dimethylolpropionic acid, and with "the incorporation of branching agents of this type by means of compounding and solid-phase post-condensation" processes (Spec. 2:15-27). However, Appellants' Specification identifies these polymers as "dendrimeric" and not "highly branched or hyperbranched polymers." In other words, they have a perfectly symmetrical structure. Appellants' Specification teaches a preferred process for obtaining a polycarbonate of component B1), involving using a carbonate or phosgene and an alcohol having at least 3 OH groups (Spec. 9, ll. 8-30). However, the polycarbonates of the invention do not appear to be limited to this process in that the Specification also defines a carbonate and diol condensate reaction as part of the invention (Spec. 12:18-23 and 14:1-4).

As pointed out by the Examiner (Ans. 20), claim 14 recites only the use of "highly branched or hyperbranched polycarbonates" and does not limit the polycarbonates to any particular type or to polycarbonates made by any particular process. While we read the claims in light of the Specification to determine what one of ordinary skill in the art would consider the broadest reasonable interpretation, "limitations are not to be

read into the claims from the specification.” *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993). “It is the applicants’ burden to precisely define the invention, not the PTO’s.” *In re Morris*, 127 F.3d 1048, 1056 (Fed. Cir. 1997).

Further, Appellants present no evidence to demonstrate that the polycarbonates taught by Brenner have a perfectly symmetrical structure so as to be characterized as a “dendritic polymer” rather than the non-symmetrical structure of a “highly branched or hyperbranched polymer.”

Brenner teaches “highly branched polycondensates [particularly polycarbonates] which can be obtained by polycondensation of monomers capable of polycondensation [particularly a bisphenol and a carboxylic diester] in the presence of branching agents” (Brenner, col. 1, ll. 61-67 and col. 4, ll. 37-44). The branching agents may be polymers, oligomers, or “dendritic polymers” (Brenner, col. 1, ll. 61-67). Brenner specifically defines “dendritic polymers” as including both “so-called highly branched polymers and so-called dendrimers” (Brenner, col. 2, ll. 30-32). As with Appellants’ Specification, Brenner describes “dendrimeric polymers” as having a “globular, perfectly branched macromolecular structure,” but distinguishes “dendrimeric polymers” from “highly branched polymers” (*see* Brenner, col. 4, ll. 30-37). Thus, despite Appellants’ assertion, Brenner is not limited to using only dendrimers as branching agents. Moreover, Appellants have not presented any evidence that the resulting polycarbonate would have a perfectly symmetrical structure of a dendritic polymer, even if a dendrimer was used as a branching agent.

Appellants also contend that “the Office has not shown why one skilled in the art would consider modifying Scherzer with [Brenner], much less having been led to do so” (App. Br. 6).

The Examiner indicates that “Brenner teaches a highly branched polycarbonate which has have [sic] good properties during both extrusion and injection molding . . . [and] can be blended with other thermoplastic polymers” (Ans. 4). The Examiner thus concludes that one of ordinary skill in the art would have added the highly branched polycarbonate of Brenner to the composition of Scherzer for the expected benefit of controlling and changing the ease of processability (Ans. 5). We find the Examiner has provided a sufficient rationale based on the teachings of the prior art as to why one skilled in the art would have arrived at the claimed invention. Appellants present no arguments for us to conclude that the Examiner’s position is untenable.

Appellants also contend that the improvements in flowability of the present invention are not achieved by the references of record, citing pages 39 to 40 of Appellants’ Specification (App. Br. 7). However, Appellants have not claimed any particular measured flowability nor any improvement in flowability and, thus, cannot distinguish the claim from the prior art on this basis. It is the claims that define the invention and, therefore, the absence in the prior art of subject matter not included in the claims cannot be a basis for patentability. *See Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988); *In re Self*, 671 F.2d 1344, 1348 (CCPA 1982) (“[A]ppellant’s arguments fail from the outset because . . . they are not based on limitations appearing in the claims.”). We note that Appellants have made no assertion that any improvement in flowability

demonstrated by the data in Appellants' Specification would have been unexpected over the prior art of record to overcome the Examiner's conclusion of obviousness (*see generally* App. Br.).

The weight of the evidence taken as a whole supports the Examiner's conclusion of obviousness under the law.

III. CONCLUSION

On the record before us and for the reasons discussed above, we sustain the rejection maintained by the Examiner.

IV. DECISION

We affirm the Examiner's decision.

V. TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

cam



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

11/813,833

07/12/2007

Dietrich Scherzer

12810-00509-US

7670

23416

7590

02/15/2012

CONNOLLY BOVE LODGE & HUTZ, LLP

P O BOX 2207

WILMINGTON, DE 19899

EXAMINER

LEE, DORIS L

ART UNIT

PAPER NUMBER

1764

MAIL DATE

DELIVERY MODE

02/15/2012

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

1 RECORD OF ORAL HEARING
2
3 UNITED STATES PATENT AND TRADEMARK OFFICE
4
5
6 BEFORE THE BOARD OF PATENT APPEALS
7 AND INTERFERENCES
8
9

10 *Ex parte* DIETRICH SCHERZER, BERND BRUCHMANN, ANDREAS
11 EIPPER, JEAN-FRANCOIS STUMBE, CARSTEN WEISS, MICHAELA
12 LIESE, and MARK VOLKEL
13

14
15 Appeal 2011-001420
16 Application 11/813,833
17 Technology Center 1700
18

19
20 Oral Hearing Held: January 12, 2012
21

22
23 Before CATHERINE Q. TIMM, BEVERLY A. FRANKLIN (video), and
24 RAE LYNN P. GUEST, *Administrative Patent Judges*.
25

26 APPEARANCES:

27
28 ON BEHALF OF THE APPELLANT:

29
30 BURTON A. AMERNICK, ESQUIRE
31 Connolly, Bove, Lodge & Hutz, LLP
32 1875 Eye Street, N.W.
33 Suite 1100
34 Washington, D.C. 20006
35 (202) 331-7111
36
37
38

1 The above-entitled matter came on for hearing on Thursday, January
2 12, 2012, commencing at 3:24 p.m., at the U.S. Patent and Trademark
3 Office, 600 Dulany Street, Alexandria, Virginia, before Paula Lowery,
4 Notary Public.

5 P R O C E E D I N G S

6 - - - - -

7 JUDGE TIMM: Counselor, you have 20 minutes to present your
8 case. We have one of our judges -- Judge Franklin -- who's here
9 electronically with us today. She'll be able to see and hear you.

10 MR. AMERNICK: Thank you.

11 In the present case, the invention is related to thermoplastic polyester
12 compositions. The compositions contain a thermoplastic polyester and then
13 a second component, which is actually where we deviate from the prior art,
14 that second component being a highly-branched or hyper-branched
15 polycarbonate and/or a highly-branched or hyper-branched polyester of a
16 particular type.

17 The third component is a hypoxidized natural occurring oil, or
18 hypoxidized natural fatty acid ester. There can be auxiliary agents up to a
19 particular amount. All those ingredients are recited in particular relative
20 amounts.

21 The improvements achieved by the invention relate to the fact that we
22 get good flowability of the compositions, which is very important for
23 molding compositions, in conjunction with maintaining good mechanical
24 properties.

1 Various attempts in the final art, certain additives, result in maybe
2 good flowability but at the degradation of the mechanical properties. So
3 that's an important, real world improvement and an important aspect of the
4 invention.

5 The issues in the case: there were issues with respect to obviousness-
6 type double patenting. Those have been taken care of. We have filed
7 terminal disclaimers after the Examiner's answer. It seems they're entered,
8 and that should really be off the table and taken care of.

9 The remaining issue in the case is whether or not the claims are
10 obvious under Section 103 of the statute. The rejection is based upon three
11 references.

12 There's a primary reference which is a WO publication 2004-069912.
13 We can refer to -- at least when I review that, I refer to the counterpart U.S.
14 Patent Application --

15 JUDGE TIMM: The Examiner is doing the same, correct? The
16 Examiner is also referring to the counterpart?

17 MR. AMERNICK: Yes.

18 JUDGE TIMM: All right.

19 JUDGE TIMM: The WO is in German. I'm a little better in English.

20 The counterpart U.S. Patent Application Publications, again, 2006-
21 0142442 to Scherzer.

22 Incidentally, that is owned by BASF, who happens to be the assignee
23 of this application; and there is even some overlap inventors. So that's the
24 primary reference.

1 There are two secondary references relied upon. The first of which is
2 U.S. Patent 6,528,612 to Brenner. Again, curiously enough, that's a BASF
3 patent.

4 Then there's another reference which is a U.S. Patent Application
5 publication 2002-061113 to Dvornik.

6 With respect to how we deviate from the prior art, primary reference
7 Scherzer, and as appreciated by the Examiner, fails to disclose or describe
8 the second component of the composition which I mentioned. The highly-
9 branched or hyper-branched polyester and/or similar type of polycarbonate.

10 The primary reference is really concerned with improving resistance
11 to hydrolysis, which is a problem with respect to molding compositions.
12 Some detrimental properties there.

13 There's no real discussion there or concern about viscosity aspects. Of
14 course they're concerned about mechanical properties.

15 Even when you look at the examples there, when they add their
16 additive, which happens to be the hypoxidized material which is our third
17 component, compared to not having it in there they're actually worse with
18 respect to the viscosity recitations characteristics of the composition.

19 Secondary references are relied upon to fill that gap -- that hole -- in
20 the primary reference. The first of which is the Brenner reference. That's
21 basically being relied upon to show a highly-branched or hyper-branched
22 polycarbonate.

23 The materials, however, in Brenner are not really what the prior art
24 deems to be hyper-branched or highly-branched polycarbonates. What the
25 art really considers -- even though they use that term in the patent itself,

1 what they're really looking at are materials that are more similar to these
2 dendritic polymers which we refer to in the specification as prior art and why
3 we want to deviate from those type of materials.

4 We also speak about that in the specification when we talk about the
5 highly-branched or hyper-branched polymers that we're using. The art --
6 and there are publications that talk about that -- do distinguish between those
7 two.

8 If you look at Brenner, they form their materials -- and there are
9 branch materials, but they're using dendrimers in order to get their materials.
10 That is a key part of the invention in Brenner.

11 They can also use some other types of polymeric branching materials,
12 but it seems when you look at what the objective is there as to minimize any
13 differences in various molecular weights of change on those type of
14 materials, those would be similar to the dendrimers that are present in the
15 prior art.

16 There are problems when you do add dendrimers to thermoplastic
17 polyesters. We discuss those on page 1 of the specification. Some of those
18 problems involve poor solubility with polyesters, high glass transition
19 temperatures, which translates to the fact you would need much higher
20 temperatures to carry out any type of molding process in order to shape the
21 materials.

22 Again, that is a detriment.

23 That's really Brenner, and Brenner doesn't really suggest at
24 all -- they do talk about viscosity, but there's no idea there that if they added
25 those materials, even though we contend they're different than the materials

1 we have, but if they added them to a polyester as a component that, in fact,
2 you would still be able to achieve this combination of improved fluidity,
3 along with maintaining good mechanical characteristics, good mechanical
4 properties.

5 JUDGE TIMM: If I hear your argument correctly here, it's the words
6 highly-branched or hyper-branched in your claim that distinguish over the
7 Brenner reference?

8 MR. AMERNICK: Right.

9 JUDGE TIMM: Okay.

10 MR. AMERNICK: That's correct.

11 JUDGE GUEST: Is there somewhere where those terms are defined
12 that would distinguish them from what's taught by Brenner? Is it a process
13 of making it? What is it?

14 MR. AMERNICK: Well, we do go into great detail in the
15 specification of how we make -- we refer to prior publications in the
16 specification. At page 8 we start discussing it, then page 11, page 17. It
17 goes on and on talking about it.

18 If you'll note in our specification, as well as other publications that we
19 make reference to, that distinguish these types of materials, they're really
20 using monomeric materials, certain polyfunctional monomeric materials,
21 particular conditions in order to get this branching.

22 Using this term highly-branched or hyper-branched, you're really
23 talking about non-uniformity in both the structure and in the chain length of
24 the branching. That's very distinct from the dendrimers where it's more a

1 spherical type of configuration where the molecular weights of the various
2 chains are very, very similar.

3 In fact, the whole idea is to be exactly the same -- what you refer to as
4 poly dispersability as being one as far as prior art materials.

5 So we do define it pretty well in the spec. The art is well aware of
6 when you use those terms what we're really talking about.

7 JUDGE GUEST: But your claim only states at least one highly-
8 branched or hyper-branched polycarbonate. Your claim doesn't have any
9 other claim limitations as to what type of branch polycarbonate that might
10 be.

11 MR. AMERNICK: You're correct.

12 JUDGE GUEST: Dendrimer or linear or uniform.

13 MR. AMERNICK: You're correct, and I think the reliance had been,
14 basically, what the art -- you know, implicitly and intrinsically would
15 understand it to be.

16 That hadn't been -- that's an interesting point you bring up, but it's
17 nothing that we had an issue with previously with the Examiner. I think the
18 Examiner seems to have understood or taken the definition that we're
19 speaking about.

20 JUDGE GUEST: Well, in the response to arguments the Examiner
21 actually says what I just said, that you don't define it in any way. So the
22 polycarbonates of Brenner read on the claim.

23 MR. AMERNICK: Right, the Examiner took that, and that's why I'm
24 referring back to in the details of Brenner that you look at it, and it really
25 defines something that's going to be more like a dendrimer.

1 JUDGE GUEST: Do you raise any of this in your Brief?

2 MR. AMERNICK: In the Brief -- it was brought up, but not in great
3 detail that I'm bringing up now. It was mentioned that they're more like the
4 dendrimers. They refer to some portions of Brenner.

5 I don't know if they really referred to as much detail as I've discussed.

6 JUDGE TIMM: You do have a disclosure on page 6 of your Brief
7 which talks about the hyper-branched condensates or polycondensates which
8 are similar to those discussed in the specification at page 1, lines 15-21.

9 MR. AMERNICK: Right.

10 JUDGE TIMM: Those are different than the hyper-branch
11 polycarbonates --

12 MR. AMERNICK: Correct.

13 JUDGE TIMM: --that are Component B of the claim?

14 MR. AMERNICK: Yeah. Admittedly, you know, maybe we should
15 have gone into more detail on that aspect in the Brief.

16 For instance, when asked one thing that Brenner even says they're
17 trying to get away with, and this is in Column 1, Line 34, they talk about
18 some problems with other type of branch polycarbonates.

19 They say they have a relatively broad molecular weight distribution,
20 which is actually the type of thing we have here when you're talking about
21 highly-branched or hyper-branched.

22 Because you have high polydispersability, and they don't want that
23 type of thing. So taking the fact that their examples within the invention,
24 examples 1 to 3, use a dendritic branching agent; and they compare it to
25 example 4, which doesn't have it.

1 The whole idea is they get much better processing characteristics
2 which they show in their Table 1 under the S&B values there.

3 JUDGE GUEST: What is the dendritic branching agent of Example
4 1?

5 MR. AMERNICK: I'm sorry?

6 JUDGE GUEST: What is the dendritic branching agent in Example
7 1?

8 MR. AMERNICK: In those examples? That's a polyethylene -- I'm
9 sorry a polyester with certain -- they talk about the end hydroxic group.
10 That PE 3a OH.

11 The other reference, Dvornik, was relied upon for the alternative
12 feature in the broadest claim of this hyper-branch or highly-branched
13 polyester. Dvornik actually does show highly-branched or hyper-branched
14 polyesters.

15 In fact, just to mention, I distinguish those from the dendrimers as we
16 just spoke about.

17 The reason that is not combinable with the primary reference is, first
18 of all, there's no suggestion there of using it as an additive to another
19 polymeric material. There's no suggestion there that if you did so you would
20 have this combination.

21 Again, good fluidity along with the excellent mechanical properties.
22 Furthermore, not even certain that Dvornik is even relevant to molding
23 compositions because what they're talking about is use of these materials
24 with the spec to coating compositions. That's their main objective there.

1 Certainly a coating composition characteristics as compared to
2 molding composition, there's some distinct features there.

3 The one that comes to my mind is that you want a coating
4 composition that will adhere to another substrate and stay there. The
5 molding composition you want to have it easily processed and easily
6 removed from a mold surface without leaving any substantial residue there.
7 In fact, that's one of the advantages that we speak about in the present
8 invention. The compositions within the present invention do not leave a
9 residue on a mold. Likewise, avoid exudation of any additives that are in the
10 composition.

11 The adherence as contrasted to removability are certainly two distinct
12 characteristics. One you would want those with a coating composition and
13 would not appreciate those if you're dealing with multiple molding
14 compositions.

15 So I don't think there's any real suggestion there to pluck out the
16 material in Dvornik and put it into the primary reference.

17 In addition, the polyester mentioned in Dvornik is only one of a
18 number of potentially highly-branched polymeric materials. They talk about
19 polyureas, which seem to be the preferred one, because all the specific
20 examples there except for one is actually a polyurea.

21 The other example is a polyamino amine compound. They talk about
22 polyurethanes, and they talk about polyimids. You're not even sure that
23 you're directed even to the polyester that's potentially made according to
24 Dvornik. There's nothing to even lead you to take that particular material.

1 So, there again, I think it's pretty far afield. In fact, I'll refer to one
2 comment --

3 JUDGE GUEST: I want to interrupt you for a second. Your claim
4 has that you can either have the highly-branched or hyper-branched
5 polycarbonate or the hyper-branched or highly-branched polyester.

6 MR. AMERNICK: Correct.

7 JUDGE GUEST: So the Examiner really doesn't need to use both the
8 Brenner and the Dvornik. He could rely on one or the other and still --

9 MR. AMERNICK: Yeah, he --

10 JUDGE GUEST: Let me phrase that differently. He can find prior art
11 that references only your hyper-branched polycarbonate or your hyper-
12 branched polyester and meet the claim limitation. He does not need to show
13 both. Correct?

14 MR. AMERNICK: As far as the claim, you're correct. Because it's in
15 the alternative.

16 I think there are some dependent claims in the case where we drill
17 down on -- speaking about the polycarbonate. Some I believe we drill down
18 on speaking about the polyester.

19 So in those claims maybe you would need the additional reference,
20 one or the other. The claims that specifically speak about the polycarbonates
21 -- I guess Claims 15, 16, 17 -- they have more detail about it, Claims 18, and
22 then Claims 19 through 23 have some detail about the polyester.

23 So in those you might really need to look at both separately. But you
24 are correct, as far as the claim is concerned, you really only need -- if you
25 were to have one of those. That's absolutely right.

1 JUDGE GUEST: Going back to the Brenner case for a second, you
2 mentioned there wasn't any reason to combine the teachings of Brenner into
3 the composition -- what you had said, I believe, is that you wouldn't
4 necessarily get the results you would expect in combining the references:
5 the Brenner and Scherzer reference.

6 But the Brenner reference teaches you can introduce this to molding
7 compositions for forming molded articles. So it clearly teaches adding this
8 to molded compositions, including polyester compositions.

9 So that would give the Examiner sufficient basis for showing that you
10 could combine these references.

11 MR. AMERNICK: You could, but you would necessarily know
12 whether or not it's compatible. If people --

13 JUDGE GUEST: Isn't that a teaching that it is compatible?

14 MR. AMERNICK: Well, it says you can put -- it's a very generalized
15 statement. What the experience has been with respect to the polyesters and
16 the molding compositions is that the dendrimers -- this is mentioned in our
17 specification on page 1 -- have a problem of compatibility and solubility in
18 polyesters.

19 So there's this negative teaching there, I believe, that you --

20 JUDGE GUEST: That's in your spec, right?

21 MR. AMERNICK: Yes, it's in our specification. It starts at page 1,
22 line 29, and talks about the dendritic polymers, what they are, and what is
23 their downfall in the prior art.

24 So the cost to Brenner materials are closely akin to those. People
25 skilled in the art would shy away from believing that there was

1 compatibility. There's no indication that you would not adversely affect
2 mechanical properties to a detrimental amount there.

3 JUDGE GUEST: The spec then seems to be contradicting what's in
4 the reference. It says you can combine this.

5 MR. AMERNICK: True, but it's a very general statement. It's not as
6 if Brenner, you know, earmarked and specifically said, okay, polyesters is
7 what we're all about here. It's just mentioned in conjunction with a lot of
8 other things.

9 It's one of those paragraphs where you're saying we can do this, we
10 can do that, we can do a lot of things. Certainly, there's nothing in there
11 where they actually did any of that.

12 Then you have to worry about how much are they talking about? Are
13 they talking about adding polyesters to the materials in Brenner where you're
14 adding a little bit of polyester, or are you adding a little bit of the materials
15 of Brenner to polyester?

16 We also have these relative amounts that need to be observed. Again,
17 in order to get the combination characteristics that we're talking about.
18 I mention one other thing, the main point in the Examiner's answer for
19 motivation for making these combinations was -- it's a statement on page 5,
20 lines 6 and 7 of the answer. It says: "They are combinable because they're
21 concerned with the same field of endeavor, namely thermoplastics."

22 My own view of that -- again, this is my own opinion, that's too broad
23 of a brush for the same field of endeavor. Just because they're thermoplastic
24 polymers, that's a pretty, pretty broad statement.

1 I think when the case law talks about same field of endeavor, they're
2 getting down to something more specific than that. In fact, that's my reading
3 of the various cases.

4 JUDGE GUEST: He also points there to Column 1, lines 19 - 27,
5 talking about good processability of flame retardant materials.

6 MR. AMERNICK: Which reference?

7 JUDGE GUEST: This is on page 5 of the Answer.

8 MR. AMERNICK: Okay.

9 JUDGE GUEST: The Examiner says: "One would have been
10 motivated to make this combination in order to receive the benefit of
11 controlling and changing the ease of processability of the flame retardant
12 material."

13 The reference does talk about that it does provide excellent
14 processability.

15 MR. AMERNICK: It does. The materials there do provide the
16 processability.

17 JUDGE TIMM: But the material in Brenner, from what you said in
18 your first argument, is not a hyper-branched --

19 MR. AMERNICK: Yeah, it's different. It's more akin -- getting back
20 to what we said -- to the dendrimer-type of polymers.

21 JUDGE TIMM: So even if it had some benefit for the combination,
22 you still wouldn't end up with your claimed invention?

23 MR. AMERNICK: Yeah, the concern would be because they're like
24 the dendrimer polymers that with a thermoplastic polyester you're not going
25 to have compatibility that you're going to need to have (a) maintaining the

1 mechanical properties; (b) prevent stuff from falling apart when you're doing
2 the molding to prevent residue on the mold surface.

3 Those are things we speak about in the specification.

4 JUDGE TIMM: So I think one of the dispositive issues in this case is
5 really what is meant by highly-branched or hyper-branched polycarbonate in
6 your claim.

7 Because if Brenner isn't one of those polymers --

8 MR. AMERNICK: Right, and even if you look at two things -- forget
9 the publications we refer to because we don't have those in front of us. But
10 looking at our method and discussing how these things are prepared, which
11 is somewhat consistent with Dvornik's method of preparing materials.
12 You're starting out and you're only using monomeric materials, certain
13 conditions certainly of the relative amounts, what types of monomeric
14 materials, polymerization conditions -- you're not using branching materials
15 that are relatively high molecular weight as they're carried out and required
16 in Brenner.

17 JUDGE TIMM: The question is: is your specification specific enough
18 to sort of weed out these dendritic polymers?

19 MR. AMERNICK: I believe it is. The reason I say that is we
20 specifically -- right at the beginning specifically mentioned -- we had
21 problems with these dendrimer polymers.

22 What we're talking about is what the art appreciates as highly-
23 branched or hyper-branched particular polymers. Then we go into not only
24 how we make them, because that might leave something open; but we
25 mention other prior publications that are in the art that distinguish.

1 We say this is how they distinguish the highly branched or hyper
2 branched from the dendrimers.

3 JUDGE TIMM: When you refer to, for instance, the Patent 9,745,474
4 is a polyester, an AB2 molecule, which is more akin to the second B 2
5 polyester of the claim, is that correct?

6 MR. AMERNICK: Which?

7 JUDGE TIMM: It's on the specification, page 2, line 15 and refers to
8 World Patent --

9 MR. AMERNICK: Correct, that's a dendrimer-type of polyester,
10 which is different from the polyester. When you get into the polyester
11 aspect, different from what we have here.

12 JUDGE TIMM: Right, your claim also encompasses these highly-
13 branched or hyper-branched polycarbonates.

14 MR. AMERNICK: Correct.

15 JUDGE TIMM: The question is does that distinguish from the
16 Brenner reference, which is also a polycarbonate?

17 MR. AMERNICK: Right, that reference to the WO on that page, I
18 would say really -- I haven't read the whole thing, but it seems to me it's the
19 polyester.

20 JUDGE TIMM: Right.

21 MR. AMERNICK: It seems to me it's not the polycarbonate. What
22 we would have to go to with respect to that would be -- I guess starting at
23 page 8, and there may be other places, where we're talking about the highly-
24 branched polycarbonates.

1 Then it says down at page 8, line 17 and following, it says see also
2 Floury, and it gives a reference, and Frey and gives another reference, for
3 the definition of dendritic and hyper-branch polymers.

4 Then we do talk about other aspects of why they are different in the
5 specification. The big difference being -- just looking at it from the broadest
6 concept is the dendrimers are more or less spherical types of polymers, chain
7 lengths equal.

8 Whereas in the hyper-branched or highly-branched, you're looking at
9 unequal molecular structure, unequal chain lengths. Different molecular
10 weights.

11 They talk about polydispersability both in the specification and what
12 the prior art appreciates there.

13 JUDGE GUEST: I have a question about your spec. You have a
14 definition for hyper-branched, and you have definitions for dendritic.

15 MR. AMERNICK: That's a tough one.

16 JUDGE GUEST: Hyper-branched is having a degree of branching of
17 a certain amount, it looks like 10 to 99 percent as defined in a certain way.
18 then the dendritic is defined as having the same degree of branching defined
19 in the same way from 99.9 percent to 100 percent.

20 I don't find in your spec anywhere a definition for highly branched.

21 MR. AMERNICK: There's some discussion of highly branched.

22 JUDGE GUEST: Can you point me to that?

23 MR. AMERNICK: Sure, page 11, for example. Starting at line 30
24 mentions certain characteristics, what the end groups are. Then starting at
25 the next paragraph it talks about -- it says highly functional, highly

1 branched. Mentions the number of functional groups, what those functional
2 groups are.

3 Then following that there's a discussion of how they're prepared. I
4 believe there's a similar parallel discussion in the specification when we
5 come to the polyester part -- the other alternative.

6 JUDGE TIMM: Your claim doesn't require a highly functional,
7 highly- branched polycarbonate. It only requires a highly-branched
8 polycarbonate.

9 So is there something within that discussion that's specific to highly
10 branched that would distinguish over these dendritic polymers?

11 MR. AMERNICK: I would suggest that if you read that in
12 conjunction with the specification, one would understand that that's what's
13 being discussed.

14 JUDGE TIMM: I think we understand your position.

15 MR. AMERNICK: I'm finished.

16 JUDGE TIMM: We're way out of time.

17 MR. AMERNICK: I'm sorry.

18 JUDGE TIMM: That's okay, we wanted to discuss the issues.

19 Did you have any questions, Judge Franklin?

20 JUDGE FRANKLIN: No more questions.

21 MR. AMERNICK: Thank you, Your Honors, I appreciate the time.

22 (Whereupon, the proceedings at 4:01 p.m. were concluded.)

23



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

11/996,489

01/22/2008

Andreas Eipper

12810-00608-US

7450

23416

7590

02/16/2012

CONNOLLY BOVE LODGE & HUTZ, LLP

P O BOX 2207

WILMINGTON, DE 19899

EXAMINER

GULAKOWSKI, RANDY P

ART UNIT

PAPER NUMBER

1766

MAIL DATE

DELIVERY MODE

02/16/2012

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ANDREAS EIPPER, BERND BRUCHMANN,
CARSTEN WEISS, MARK VOLKEL, KURT HOFLLI, and
CHRISTOPHE GINSS

Appeal 2011-001806
Application 11/996,489
Technology Center 1700

Before CATHERINE Q. TIMM, BEVERLY A. FRANKLIN, and
RAE LYNN P. GUEST, *Administrative Patent Judges*.

GUEST, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision to reject claims 1-20 under 35 U.S.C. § 103(a) as unpatentable over Avery (US 4,212,791; issued July 15, 1980) in view of Omatsu (US 4,935,488; issued June 19, 1990). We have jurisdiction under 35 U.S.C. § 6(b). An oral hearing was held January 12, 2012.¹

¹ We refer to the transcript of the oral hearing herein as "Transcript."

We AFFIRM.

Appellants' invention relates to a molding composition comprising a thermoplastic polymer, a highly branched or hyperbranched polycarbonate or polyester, a thermoplastic polyester elastomer, and other additives (Spec. 1:5-17). The molding composition has good flowability characteristics and mechanical properties and does not exude or form mold deposits (Spec. 2:32-35). Claim 1 is illustrative:

1. A thermoplastic molding composition, comprising
 - A) from 10 to 98.9% by weight of at least one thermoplastic polyester,
 - B) from 0.01 to 50% by weight of
 - B1) at least one highly branched or hyperbranched polycarbonate with an OH number of from 1 to 600 mg KOH/g of polycarbonate (to DIN 53240, Part 2), or
 - B2) at least one highly branched or hyperbranched polyester of A_xB_y type, where x is at least 1.1 and y is at least 2.1,
 - or a mixture of these,
 - C) from 0.1 to 40% by weight of a thermoplastic polyester elastomer,
 - D) from 0 to 60% by weight of other additives,where the total of the percentages by weight of components A) to D) is 100%.

Appellants have not argued any particular claim on appeal separately for any of the other claims (*see* App. Br. 3-7). Accordingly, all the appealed claims stand or fall together with representative claim 1. *See* 37 C.F.R. § 41.37(c)(1)(vii).

II. DISPOSITIVE ISSUE

The dispositive issue on appeal arising from the contentions of Appellants and the Examiner is: does the evidence support the Appellants' view that the Examiner erred in concluding that the claimed molding composition having a highly branched or hyperbranched polyester of A_xB_y type, where x is at least 1.1 and y is at least 2.1, would have been obvious to one of ordinary skill in the art based on the teachings of Avery and Omatsu? We answer this question in the negative.

III. DISCUSSION

We adopt the Examiner's findings in the Answer as our own and add any additional findings of fact appearing below for emphasis.

Appellants contend that "there is no description or indication in Omatsu of a *highly branched or hyperbranched polyester* of A_xB_y type, where x is at least 1.1 and y is at least 2.1" and that Omatsu describes polyesters with only OH functions at the end of the chain, the disadvantages of which are discussed on pages 1-2 of Appellants' Specification (App. Br. 5). Appellants' attorney elaborated on this position in the oral hearing in stating that "it's our viewpoint that a skilled artisan knows that hyper-branched are specific materials, and we discuss this in the Specification" (Transcript 3:11-13). Specifically, Appellants' attorney identifies the invention based on structure, including a focal point with hyperbranching material spreading out from the center but not interconnected between the branches (Transcript 3: 14-19). As evidence, Appellants' attorney points to page 12, lines 18-20 of the Specification, describing adjusting the relative ratios of the compounds (Transcript 4:16-5:1).

We are not persuaded that Appellants' Specification has sufficiently defined a "highly branched or hyperbranched polyester" to distinguish over the polyester taught by Omatsu.

During examination, "claims . . . are to be given their broadest reasonable interpretation consistent with the specification, and . . . claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (*quoting In re Bond*, 910 F.2d 831, 833 (Fed. Cir. 1990)).

Appellants' Specification differentiates between "[d]endritic polymers having a perfectly symmetrical structure, known as dendrimers" and "highly branched or hyperbranched polymers" that "have linear polymer chains and unequal polymer branches" only in terms of symmetry of their structure and ease of manufacture (Spec. 1:27-2:8, 18:19-27, and 19:27-30).

Appellants' Specification describes that "hyperbranched polymers" can be prepared in two ways, namely as AB₂ type, i.e., using a trifunctional monomer having one reactive group A for each two reactive groups B, and as A_x+B_y type, i.e., the reaction of a difunctional monomer with a trifunctional monomer (Spec. 2:9-18). Appellants' Specification describes problems known to occur with "dendrimeric AB₂ type polyester," in which a polyhydric alcohol reacts with dimethylolpropionic acid, and with "the incorporation of branching agents of this type by means of compounding and solid-phase post-condensation" processes (Spec. 2:20-32). However, Appellants' Specification identifies these polymers as "dendrimeric" and not "highly branched or hyperbranched polymers." In other words, they have a perfectly symmetrical structure.

While the Examiner's rejection is directed toward the B2) component of claim 1, i.e., the polyester, the portion of Appellants' Specification cited by Appellants' attorney is directed to a process for preparing polycarbonates, i.e., component B1) (Spec. 12:18-27). Rather, Appellants' Specification teaches a preferred process for obtaining the polyester of component B2), involving reacting dicarboxylic acids with trihydric alcohols or tricarboxylic acids with diols (Spec. 19:12-25).

As pointed out by the Examiner (Ans. 20), claim 14 recites only the use of "highly branched or hyperbranched polyesters of A_xB_y type, where x is at least 1.1 and y is at least 2.1." The Specification merely defines an A_xB_y type polyester by the molecules reacted to form the polyester and, thus, defines the polyester only by the functionalities of the components used to produce the polyester. The reaction need not occur by any particular process. While we read the claims in light of the Specification to determine what one of ordinary skill in the art would consider the broadest reasonable interpretation, "limitations are not to be read into the claims from the specification." *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993). "It is the applicants' burden to precisely define the invention, not the PTO's." *In re Morris*, 127 F.3d 1048, 1056 (Fed. Cir. 1997).

We agree with the Examiner (Ans. 6), that Omatsu discloses reacting the same dicarboxylic acids and the same trihydric alcohols as those taught by the invention, which is the only characteristic used to define an A_xB_y type polyester (Omatsu, col. 9, ll. 3-32; Spec. 19:33-38 and 21:10-16). Thus, it is reasonable to conclude, without evidence to the contrary, that Omatsu teaches the same highly branched or hyperbranched polyesters claimed. Appellants present no evidence to demonstrate that the polyesters taught by

Omatsu have a perfectly symmetrical structure so as to be characterized as a “dendritic polymer” rather than the non-symmetrical structure of a “highly branched or hyperbranched polymer.”

Appellants also contend that the Examiner has not articulated a reason that one skilled in the art would have been led to modify or combine Avery with Omatsu to achieve the claimed invention (App. Br. 6; Transcript 5:6-8).

The Examiner relies on the abstract of Omatsu as stating that the trimethylolheptanes are “useful as raw material for the production of polyesters for use in a variety of applications, including molding resins” (Ans. 4). The Examiner thus concludes that one of ordinary skill in the art would have substituted the polyester composition of Omatsu for the polyester oligomer of the composition of Avery to yield a composition having increased flexibility and low-temperature resistance, citing col. 3, lines 44-47 on Omatsu (Ans. 5). We find the Examiner has provided a sufficient rationale based on the teachings of the prior art as to why one skilled in the art would have arrived at the claimed invention.

Appellants suggest that the abstract is focused on the use of trimethylolheptanes and not the polyester made therefrom (Transcript, 5:9-23). We disagree with Appellants’ interpretation of Omatsu’s abstract. The abstract states that the trimethylolheptanes “are useful as raw materials for the production of polyesters for use in or as raw materials or modifiers for paints, inks, adhesives, coating compositions and molding resins. Uses for the trimethylolheptanes are also provided” (Omatsu, Abstract). We understand the first sentence to refer to uses for the polyesters and the second sentence to refer to uses for trimethylolheptanes. Our understanding

is supported by the background section of Omatsu which teaches the wide use of polyester resins as molding materials (Omatsu, col. 1, ll. 41-44).

The weight of the evidence taken as a whole supports the Examiner's conclusion of obviousness under the law.

IV. CONCLUSION

On the record before us, we sustain the rejection maintained by the Examiner.

V. DECISION

The decision of the Examiner is AFFIRMED.

VI. TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

cam



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/996,489	01/22/2008	Andreas Eipper	12810-00608-US	7450

23416 7590 02/14/2012
CONNOLLY BOVE LODGE & HUTZ, LLP
P O BOX 2207
WILMINGTON, DE 19899

EXAMINER

GULAKOWSKI, RANDY P

ART UNIT	PAPER NUMBER
----------	--------------

1766

MAIL DATE	DELIVERY MODE
-----------	---------------

02/14/2012

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

1 RECORD OF ORAL HEARING
2 UNITED STATES PATENT AND TRADEMARK OFFICE

3 _____
4
5 BEFORE THE BOARD OF PATENT APPEALS
6 AND INTERFERENCES
7 _____
8

9 *Ex parte* ANDREAS EIPPER, BERND BRUCHMANN, CARSTEN
10 WEISS, MARK VOLKEL, KURT HOFLI, and CHRISTOPHE GINSS
11 _____
12

13 Appeal No. 2011-001806
14 Application No. 11/996,489
15 Technology Center 1700
16 _____
17

18 Oral Hearing Held: January 12, 2012
19 _____
20

21 Before CATHERINE TIMM, BEVERLY A. FRANKLIN (video) and RAE
22 LYNN P. GUEST, *Administrative Patent Judges*.
23

24 APPEARANCES:

25
26 ON BEHALF OF THE APPELLANT:

27
28 GEORG M. HASSELMANN, ESQUIRE
29 Connolly, Bove, Lodge & Hutz, LLP
30 1875 Eye Street, N.W.
31 Suite 1100
32 Washington, D.C. 20006
33 (202) 331-7111
34

35 The above-entitled matter came on for hearing on Thursday, January
36 12, 2012, commencing at 4:02 p.m., at the U.S. Patent and Trademark
37 Office, 600 Dulany Street, Alexandria, Virginia, before Paula Lowery,
38 Notary Public.

P R O C E E D I N G S

- - - - -

JUDGE TIMM: Whenever you're ready, you have 20 minutes.

MR. HASSELMANN: May it please the Board, thank you Your Honors.

I just want to give a very brief overview of the subject matter. It's molding materials that have three mandatory components.

It's a thermoplastic polyester with component A, a thermoplastic polyester elastomer, Component C; and then either or both of the highly-branched or hyper-branched polycarbonate, or a highly-branched or hyper-branched polyester.

It's very useful as molding materials. Obviously, they have advantages over the prior art in that they have an increased moldability in the molding process and for these particular kinds they do not exude after the molding has been prepared. They also have a tendency not to foam because it's in the mold.

I have one preliminary matter. In the Examiner's answer at page 3, the Examiner at the bottom of the page is referring to the Avery reference and the Patent Number 421791 and Omatsu 4,932,488. The correct numbers are actually in Section 8 in evidence relied upon.

Those are the two patents I will be referring to.

JUDGE TIMM: Very good.

MR. HASSELMANN: I think our main argument, as appreciated by the Examiner, Avery doesn't teach the highly-branched or hyper-branched

1 polyesters. He's using the secondary reference to Omatsu for teaching these
2 features.

3 It's our viewpoint that Omatsu does not teach highly-branched or
4 hyper-branched polyesters. There was some discussion in the record and I
5 would like to refer to nonpatent literature that has been cited in the
6 information disclosure statement on October 27, 2008.

7 JUDGE TIMM: Have you referred to this in your Brief?

8 MR. HASSELMANN: No, we have not, Your Honor.

9 JUDGE TIMM: No?

10 MR. HASSELMANN: I brought copies.

11 JUDGE TIMM: It's not appropriate for you to discuss that since the
12 Examiner hasn't had a chance to address that.

13 MR. HASSELMANN: Okay. Again, it's our viewpoint that a skilled
14 artisan knows that hyper-branched are specific materials, and we discuss this
15 in the specification.

16 Most of our materials have the focal point so the hyper-branched
17 materials are prepared starting from one center, and then they branch out in
18 instances. So a very new and functional group spreads out again; but you
19 still have only one center.

20 One characteristic is that they don't -- they're never interconnected
21 between the branches.

22 JUDGE TIMM: So you have the same definitions in this specification
23 as in the other where hyper-branched refers to the degree of branching.

24 MR. HASSELMANN: Yes.

25 JUDGE TIMM: Okay.

1 JUDGE GUEST: The Examiner has pointed to Omatsu that teaches
2 manufacturing these hyper-branched polyesters with the same tri-functional
3 alcohols and di-functional acids that are used in your spec to prepare
4 polyesters. That's where he gets the impetus to say they would be the same.

5 MR. HASSELMANN: Um-hum.

6 JUDGE GUEST: If you're using the same branching materials, you
7 would get the same type of branching?

8 MR. HASSELMANN: It's a little unfortunate that I can't -- there's a
9 citation within the article that's to the exact point.

10 It's our position that what was known at the time the invention was
11 made. Hyper-branch polymers were known in the art. You need some very
12 defined conditions to obtain these.

13 Just having the same starting materials does not necessary -- the
14 article talks about conventional branched and hyper-branched.

15 It also talks about if you're just using the known polymers that you
16 don't get the dendrimers and the conditions.

17 JUDGE TIMM: Those conditions are discussed in your specification?

18 MR. HASSELMANN: One thing you have to adjust the relative
19 ratios. Having a diluted solution helps in this direction so that the one
20 molecule has a chance to grow in all directions versus being caught by
21 another growing branch and you would have these things -- can you give me
22 a half minute to see if I can find something?

23 (Pause in proceedings.)

1 MR. HASSELMANN: On page 12, lines 18-20: "When preparing
2 the highly functional polycarbonates it is necessary to adjust the ratio of the
3 compounds in such a way that the" —

4 So you need the content of the relative amounts and heat conditions
5 under which you prepare them.

6 JUDGE GUEST: It's your position that the Omatsu reference doesn't
7 do that adjustment?

8 MR. HASSELMANN: That's right. He's just condensating, so he has
9 what's known in the art as the conventionally branched polymers.

10 Another point, it's our contention that even if the Omatsu reference
11 were to teach hyper-branched polyesters, we don't think a skilled artisan is
12 directed at combining this citation with the primary Avery.

13 The Examiner is relying on the abstract for teaching that what he
14 considers to be highly-branched polyesters as being useful in moldings. I
15 found the abstract confusing because what they're really talking about is the
16 trimethyl heptanes -- it's the compound of Claim 3 -- in Omatsu. That's
17 a derivative in Claim 19 (c).

18 If you go to the summary of invention in Column 4 of Omatsu, he
19 talks about various aspects. One aspect is really to prepare these at that time
20 novel trimethyl heptanes which have a variety of uses.

21 The next paragraph has another one, the third paragraph starting at
22 line 21 talks about the polyesters that can be prepared from these trimethyl
23 heptanes. They're indicated as being useful for coating resins and for
24 coatings.

1 So the way I understand the abstract, these trimethyl heptanes are used
2 for a variety of purposes. One of them is the molding resins. Another one is
3 the polyesters.

4 He uses moldings -- it appears five times in the disclosure of Omatsu
5 in the abstract. Then in the discussion of the prior art at Column 1, Line 43
6 they talk generically about polyester resins that are used for moldings.

7 I don't think this necessarily refers to the polyester moldings of
8 Omatsu.

9 Then he uses moldings three more times. This is at Column 13 and
10 14, Lines 47, 48, and Column 14, Line 63, respectively. But this doesn't talk
11 about the polyesters that can be prepared. These are trimethyl acrylates, the
12 structure of which is shown in Column 2, Formula 1.

13 JUDGE GUEST: Where are you referencing?

14 MR. HASSELMANN: He talks about moldings three more times.
15 This is Column 13, Lines 47-48; as well as Column 14, Line 63.

16 In each of these instances he talks about the trimethyl acrylates, at
17 Column 12, Formula 1. In there, there are esters because of the reaction of
18 the triol with the acrylic acid; but there's no more alcohol or acid
19 functionality in those molecules. So you can't make a polyester out of these
20 compounds because the required functional group for ester, alcohol or acid
21 is not present any more. He uses these for curing resins because they have
22 the double bond that can be radically cured in these compositions.

23 So our contention is, yes, he does talk about polyesters, but those
24 aren't in any way related to the molding compositions. Just from the

1 disclosure, I mean maybe a skilled artisan would be motivated to try the
2 trimethyl acrylate in a molding composition, I don't know.

3 I don't see how they would end up with these to replace the polyesters
4 in the primary reference.

5 JUDGE GUEST: The primary reference does talk about the addition
6 of oligomeric polyester as an additional component to polyalkylene
7 terephthalate.

8 The Examiner also seems to say that that would be the substitution.
9 So there is motivation to add to a molding composition found within the
10 Avery reference itself in the fact that Avery includes an additional polyester
11 component.

12 MR. HASSELMANN: Can you point me -- is this in the office
13 action?

14 JUDGE GUEST: Yes, page 5 of the answer.

15 The Examiner says: "It would have been obvious [to combine --] to
16 have one of ordinary skill in the art to have used the branched polyester
17 compositions taught by Omatsu as the polyester oligomer of the composition
18 taught by Avery."

19 It says "to yield a composition with a molded article thereof having
20 increased flexibility and low temperature resistance as taught by the Omatsu
21 reference."

22 MR. HASSELMANN: Um-hum.

23 JUDGE GUEST: So the Examiner is saying the Avery reference
24 teaches an additional polyester element, and that one of ordinary skill in the
25 art would look to polyester elements --

1 MR. HASSELMANN: But the Examiner acknowledges that the one
2 in Avery are not hyper-branched --

3 JUDGE GUEST: Right. But there is an indication in Avery that you
4 would add an additional polyester to the Avery composition.

5 MR. HASSELMANN: To replace one that's present in Avery?

6 JUDGE TIMM: Or is it that you add another one?

7 JUDGE GUEST: “. . . as the oligomer polyester taught by Avery,” so
8 it's a substitution.

9 MR. HASSELMANN: Well, if we can briefly go to the Avery
10 reference, it talks at Column 1, Lines 27-34, it talks of the various attempts
11 to improve the crystallization rate. So he talks about the polyethylene oxides
12 which they used as additives. So even though a skilled artisan had expected
13 they would improve the functionality, it turned out that they have
14 undesirable properties. I think from Avery -- you have to jump to Omatsu
15 and then bring those back.

16 I think from this passage you learn that you don't necessarily add or
17 make any substitution and maintain the properties so you can have undesired
18 side effects even if you have polymers that are indicated as being useful.

19 Also at Column 4, Lines 10-15, it talks that just the addition of one
20 component, the polyester elastomers, it doesn't have the desired
21 improvement in properties. So he's basing the effects in this reference of the
22 combination of the elastomer with the polymeric polyester and --

23 At least it talks about the unpredictability in the art. You cannot
24 merely add one component and hope to have improved properties. Even

1 more so since the oligomeric polyester and the agents are indicated as being
2 critical to the invention.

3 I would argue it would render the invention Avery unsuitable for its
4 intended purpose because you've taken out a component that he describes as
5 being critical for the invention.

6 There's an additional point I'd like to make.

7 JUDGE TIMM: Okay.

8 MR. HASSELMANN: There's two hyper-branched polymers that are
9 discussed with the polycarbonates and polyesters that can be used as an
10 alternative.

11 The Examiner acknowledges that there's no reference on the record
12 that teaches the hyper-branched polycarbonates. He says he doesn't need it
13 for the independent claim, but we'd like to submit, for example, it's rejected.
14 Clearly the polycarbonate and the rejection as such is deficient because --

15 JUDGE GUEST: Do you present an argument with respect to Claim
16 4 separately in your Brief?

17 MR. HASSELMANN: No, ma'am.

18 JUDGE TIMM: Then we can't consider that argument.

19 MR. HASSELMANN: Okay, it's withdrawn.

20 JUDGE TIMM: Anything else?

21 MR. HASSELMANN: That's all I have. Do you have any questions?

22 JUDGE TIMM: Any questions, Judge Franklin?

23 JUDGE FRANKLIN: No more questions.

24 JUDGE GUEST: I have no questions.

25 JUDGE TIMM: I think we understand the issues in the case.

1 MR. HASSELMANN: Thank you very much, Your Honors.

2 (Whereupon, the proceedings at 4:20 p.m. were concluded.)

3

4

5

6

7

8

9

10

11

12

13

14